VIC 20 / Commodore 64 Memory Map　　　Jim Butterfield, Toronto Ont.

There are some differences between the 20 and 64 as indicated. Zero Page contents at power-up by Richard Evers.

Hex	Dec	VIC Hex	VIC Dec	C64 Hex	C64 Dec	Description
00 -02 00	0-2 0	4C	76	2F	47	USR Jump.　　64: Chip directional reg.
01	1	48	72	37	55	64: Chip I/O; memory & tape control
02	2	D2	210	33	51	20: JMP $D248.　　64: Unused
03 -04 03	3-4 3	AA	170	AA	170	Float-Fixed vector
04	4	D1	209	B1	177	
05 -06 05	5-6 5	91	145	91	145	Fixed-Float vector
06	6	D3	211	B3	179	
07 07	7 7	22	34	22	34	Search character
08 08	8 8	22	34	22	34	Scan-quotes flag
09 09	9 9	00	0	00	0	TAB column save
0A 0A	10 10	00	0	00	0	0 = LOAD, 1 = VERIFY
0B 0B	11 11	4C	76	4C	76	Input buffer pointer/# subscripts
0C 0C	12 12	00	0	00	0	Default DIM flag
0D 0D	13 13	00	0	00	0	Type: FF = string, 00 = numeric
0E 0E	14 14	00	0	00	0	Type: 80 = integer, 00 = floating pt
0F 0F	15 15	00	0	00	0	DATA scan/LIST quote/memory flag
10 10	16 16	00	0	00	0	Subscript/FNx flag
11 11	17 17	00	0	00	0	0 = INPUT;$40 = GET;$98 = READ
12 12	18 18	00	0	00	0	ATN sign/Comparison eval. flag
13 13	19 19	05	5	05	5	Current I/O prompt flag
14 -15 14	20-21 20	14	20	14	20	Integer value
15	21	00	0	00	0	
16 16	22 22	19	25	19	25	**Pointer:** Temporary string stack
17 -18 17	23-24 23	16	22	16	22	Last temp string vector
18	24	00	0	00	0	
19 -21 19	25-33 25	02	2	02	2	Stack for temporary strings
1A	26	FE	254	FE	254	
1B	27	1D	29	9F	159	
1C	28	0	0	00	0	
1D	29	00	0	00	0	
1E	30	00	0	00	0	
1F	31	00	0	1E	30	
20	32	00	0	00	0	
21	33	00	0	00	0	
22 -25 22	34-37 34	05	5	05	5	Utility pointer area
23	35	10	16	08	8	
24	36	F3	243	F3	243	
25	37	01	1	01	1	
26 -2A 26	38-42 38	00	0	00	0	Product area for multiplication
27	39	00	0	00	0	
28	40	00	0	00	0	
29	41	00	0	00	0	
2A	42	00	0	00	0	
2B -2C 2B	43-44 43	01	1	01	1	**Pointer:** Start of BASIC
2C	44	10	16	08	8	
2D -2E 2D	45-46 45	03	3	03	3	**Pointer:** Start of Variables
2E	46	10	16	08	8	
2F -30 2F	47-48 47	0A	10	0A	10	**Pointer:** Start of Arrays
30	48	10	16	08	8	
31 -32 31	49-50 49	0A	10	0A	10	**Pointer:** End of Arrays
32	50	10	16	08	8	
33 -34 33	51-52 51	00	0	00	0	**Pointer:** String Storage (moving down)
34	52	1E	30	A0	160	
35 -36 35	53-54 53	00	0	00	0	**Pointer:** String Utility
36	54	1E	30	A0	160	
37 -38 37	55-56 55	00	0	00	0	**Pointer:** Limit of Memory
38	56	1E	30	A0	160	
39 -3A 39	57-58 57	00	0	00	0	Current BASIC line number
3A	58	FF	255	FF	255	
3B -3C 3B	59-60 59	00	0	00	0	Previous BASIC line number
3C	60	00	0	00	0	
3D -3E 3D	61-62 61	3D	61	00	0	**Pointer:** BASIC statement for CONT
3E	62	00	0	00	0	
3F -40 3F	63-64 63	00	0	00	0	Current DATA line number
40	64	00	0	00	0	
41 -42 41	65-66 65	00	0	00	0	Current DATA address
42	66	10	16	08	8	
43 -44 43	67-68 67	00	0	00	0	Input vector
44	68	00	0	00	0	
45 -46 45	69-70 69	41	65	41	65	Current variable name
46	70	00	0	00	0	
47 -48 47	71-72 71	05	5	05	5	Current variable address
48	72	10	16	08	8	
49 -4A 49	73-74 73	05	5	05	5	Variable pointer for FOR/NEXT
4A	74	10	16	08	8	
4B -4C 4B	75-76 75	00	0	00	0	Y-save; op-save; BASIC pointer save
4C	76	00	0	00	0	
4D 4D	77 77	00	0	00	0	Comparison symbol accumulator
4E -53 4E	78-83 78	00	0	00	0	Misc. work area, pointers, etc.
4F	79	00	0	00	0	
50	80	00	0	00	0	
51	81	00	0	00	0	

Hex	Dec	VIC Hex	VIC Dec	C64 Hex	C64 Dec	Description
52	82	00	0	00	0	
53	83	03	3	03	3	
54 -56 54	84-86 84	4C	76	4C	76	Jump vector for functions
55	85	0D	13	0D	13	
56	86	D8	216	B8	184	
57 -60 57	87-96 87	00	0	00	0	Misc. numeric work area
58	88	0A	10	0A	10	
59	89	1F	15	07	7	
5A	90	03	3	03	3	
5B	91	1F	15	07	7	
5C	92	00	0	00	0	
5D	93	00	0	00	0	
5E	94	00	0	00	0	
5F	95	03	3	03	3	
60	96	10	16	08	8	
61 61	97 97	87	135	87	135	Accum#1: Exponent
62 -65 62	98-101 98	00	0	00	0	Accum#1: Mantissa
63	99	00	0	00	0	
64	100	00	0	00	0	
65	101	65	101	65	101	
66 66	102 102	4C	76	4C	76	Accum#1: Sign
67 67	103 103	00	0	00	0	Series evaluation constant pointer
68 68	104 104	00	0	00	0	Accum#1 hi-order (overflow)
69 -6E 69	105-110 105	00	0	00	0	Accum#2: Exponent
6A	106	00	0	00	0	Accum#2: Mantissa
6B	107	00	0	00	0	
6C	108	00	0	00	0	
6D	109	00	0	00	0	
6E	110	00	0	00	0	Accum#2: Sign
6F 6F	111 111	00	0	00	0	Sign comparison, Acc#1 vs #2
70 70	112 112	00	0	00	0	Accum#1 lo-order (rounding)
71 -72 71	113-114 113	01	1	01	1	Cassette buff len/Series pointer
72	114	01	1	01	1	
73 -8A 73	115-138 115	E6	230	E6	230	CHRGET subroutine; get BASIC char
74	116	7A	122	7A	122	;INC $7A
75	117	D0	208	D0	208	;BNE $0079
76	118	02	2	02	2	
77	119	E6	230	E6	230	;INC $7B
78	120	7B	123	7B	123	
79	121	AD	173	AD	173	;LDA $022D　64: LDA $022C
7A	122	2D	45	2C	44	
7B	123	02	2	02	2	
7C	124	C9	201	C9	201	;CMP #$3A
7D	125	3A	58	3A	58	
7E	126	B0	176	B0	176	;BCS $008A
7F	127	0A	10	0A	10	
80	128	C9	201	C9	201	;CMP #$20
81	129	20	32	20	32	
82	130	F0	240	F0	240	;BEQ $0073
83	131	EF	239	EF	239	
84	132	38	56	38	56	;SEC
85	133	E9	233	E9	233	;SBC #$30
86	134	30	48	30	48	
87	135	38	56	38	56	;SEC
88	136	E9	233	E9	233	;SBC #$D0
89	137	D0	208	D0	208	
8A	138	60	96	60	96	;RTS
7A -7B 7A	122-123 122	2D	45	2C	44	BASIC pointer (within subrtn)
7B	123	02	2	02	2	
8B -8F 8B	139-143 139	80	128	80	128	RND seed value
8C	140	4F	79	4F	79	
8D	141	C7	199	C7	199	
8E	142	52	82	52	82	
8F	143	58	88	58	88	
90 90	144 144	00	0	00	0	Status word ST
91 91	145 145	FF	255	FF	255	Keyswitch PIA: STOP and RVS flags
92 92	146 146	00	0	00	0	Timing constant for tape
93 93	147 147	00	0	00	0	LOAD = 0, VERIFY = 1
94 94	148 148	55	85	55	85	Serial output: deferred char flag
95 95	149 149	FF	255	FF	255	Serial deferred character
96 96	150 150	00	0	00	0	Tape EOT received
97 97	151 151	10	16	00	0	Register save
98 98	152 152	01	1	01	1	How many open files
99 99	153 153	00	0	00	0	Input device, normally 0
9A 9A	154 154	08	8	08	8	Output CMD device, normally 3
9B 9B	155 155	00	0	00	0	Tape character parity
9C 9C	156 156	00	0	00	0	Byte-received flag
9D 9D	157 157	80	128	80	128	Direct = $80/RUN = 0 output control
9E 9E	158 158	00	0	00	0	Tp Pass 1 error log/char buffer
9F 9F	159 159	00	0	00	0	Tp Pass 2 err log corrected
A0 -A2 A0	160-162 160	00	0	00	0	Jiffy Clock HML
A1	161	25	37	3B	59	

Location / Contents / Description (A2–D0)

Location Hex	Location Hex	Dec	Dec	VIC Hex	VIC Dec	C64 Hex	C64 Dec	Description
	A2		162	74	116	38	56	
A3	A3	163	163	55	85	55	85	Serial bit count/EOI flag
A4	A4	164	164	00	0	00	0	Cycle count
A5	A5	165	165	00	0	00	0	Countdown, tape write/bit count
A6	A6	166	166	00	0	00	0	Tape buffer pointers
A7	A7	167	167	00	0	00	0	Tp Wrt ldr count/Rd pass/inbit
A8	A8	168	168	00	0	00	0	Tp Wrt new byte/Rd error/inbit cnt
A9	A9	169	169	00	0	00	0	Wrt start bit/Rd bit err/stbit
AA	AA	170	170	00	0	00	0	Tp Scan;Cnt;Ld;End/byte assy
AB	AB	171	171	00	0	00	0	Wr lead length/Rd checksum/parity
AC–AD	AC	172–173	172	00	0	00	0	**Pointer:** tape bufr, scrolling
	AD		173	00	0	00	0	
AE–AF	AE	174–175	174	00	0	00	0	Tape end adds/End of program
	AF		175	00	0	00	0	
B0–B1	B0	176–177	176	00	0	00	0	Tape timing constants
	B1		177	00	0	00	0	
B2–B3	B2	178–179	178	3C	60	3C	60	**Pointer:** Start of Tape Buffer
	B3		179	03	3	03	3	
B4	B4	180	180	00	0	00	0	1 = Tp timer enabled; bit count
B5	B5	181	181	00	0	00	0	Tp EOT/RS232 next bit to send
B6	B6	182	182	00	0	00	0	Read character error/outbyte buf
B7	B7	183	183	11	17	10	16	# characters in file name
B8	B8	184	184	05	5	05	5	Current logical file
B9	B9	185	185	65	101	65	101	Current secndy address
BA	BA	186	186	08	8	08	8	Current device
BB–BC	BB	187–188	187	EF	239	F0	240	Pointer to file name
	BC		188	1D	29	9F	159	
BD	BD	189	189	00	0	00	0	Wr shift word/Rd input char
BE	BE	190	190	00	0	00	0	# blocks remaining to Wr/Rd
BF	BF	191	191	00	0	00	0	Serial word buffer
C0	C0	192	192	00	0	00	0	Tape motor interlock
C1–C2	C1	193–194	193	00	0	00	0	I/O start address
	C2		194	20	32	A0	160	
C3–C4	C3	195–196	195	6D	109	30	48	Kernal setup pointer
	C4		196	FD	253	FD	253	
C5	C5	197	197	40	64	40	64	Last key pressed
C6	C6	198	198	00	0	00	0	# chars in keybd buffer
C7	C7	199	199	00	0	00	0	Screen reverse flag
C8	C8	200	200	4A	74	49	73	End-of-line for input pointer
C9–CA	C9	201–202	201	04	4	03	3	Input cursor log (row, column)
	CA		202	4A	74	49	73	
CB	CB	203	203	40	64	40	64	Which key: 64 if no key
CC	CC	204	204	01	1	01	1	0 = flash cursor
CD	CD	205	205	0D	13	11	17	Cursor timing countdown
CE	CE	206	206	20	32	20	32	Character under cursor
CF	CF	207	207	00	0	00	.0	Cursor in blink phase
D0	D0	208	208	00	0	00	0	Input from screen/from keyboard

Location / Contents / Description (D1–FF)

Location Hex	Location Hex	Dec	Dec	VIC Hex	VIC Dec	C64 Hex	C64 Dec	Description
D1–D2	D1	209–210	209	C6	198	40	64	Pointer to screen line
	D2		210	1E	30	05	5	
D3	D3	211	211	00	0	00	0	Position of cursor on above line
D4	D4	212	212	00	0	00	0	0 = direct cursor, else programmed
D5	D5	213	213	15	21	27	39	Current screen line length
D6	D6	214	214	09	9	08	8	Row where cursor lives
D7	D7	215	215	0D	13	0D	13	Last inkey/checksum/buffer
D8	D8	216	216	00	0	00	0	# of INSERTS outstanding
D9–F0	D9	217–240	217	9E	158	84	132	
	DA		218	9E	158	84	132	Screen line link table
	DB		219	9E	158	84	132	
	DC		220	9E	158	84	132	
	DD		221	9E	158	84	132	
	DE		222	9E	158	84	132	
	DF		223	1E	30	84	132	
	E0		224	1E	30	05	5	
	E1		225	1E	30	85	133	
	E2		226	9E	158	85	133	
	E3		227	9E	158	85	133	
	E4		228	9E	158	85	133	
	E5		229	9F	159	85	133	
	E6		230	9F	159	86	134	
	E7		231	9F	159	86	134	
	E8		232	9F	159	86	134	
	E9		233	9F	159	86	134	
	EA		234	9F	159	86	134	
	EB		235	9F	159	86	134	
	EC		236	9F	159	86	134	
	ED		237	9F	159	87	135	
	EE		238	9F	159	87	135	
	EF		239	9F	159	87	135	
	F0		240	9F	159	87	135	
F1	F1	241	241	FF	255	87	135	Dummy screen link
F2	F2	242	242	08	8	87	135	Screen row marker
F3–F4	F3	243–244	243	6E	110	F0	240	Screen colour pointer
	F4		244	96	150	D8	216	
F5–F6	F5	245–246	245	5E	94	81	129	Keyboard pointer
	F6		246	EC	236	EB	235	
F7–F8	F7	247–248	247	00	0	00	0	RS-232 Rcv pntr
	F8		248	00	0	00	0	
F9–FA	F9	249–250	249	00	0	00	0	RS-232 Tx pntr
	FA		250	00	0	00	0	
FB	FB	251	251	00	0	00	0	Not Known
FC	FC	252	252	00	0	00	0	Not Known
FD	FD	253	253	00	0	00	0	Not Known
FE	FE	254	254	00	0	00	0	Not Known
FF	FF	255	255	00	0	20	32	Start of Floating to ASCII Work Area

Zero / Page tables

Hex	Dec	Description
00FF–010A	256–266	Floating to ASCII work area
0100–013E	256–318	Tape error log
0100–01FF	256–511	Processor stack area
0200–0258	600	BASIC input buffer
0259–0262	601–610	Logical file table
0263–026C	611–620	Device number table
026D–0276	621–630	Sec address table
0277–0280	631–640	Keybd buffer
0281–0282	641–642	Start of BASIC Memory
0283–0284	643–644	Top of BASIC Memory
0285	645	Serial bus timeout flag
0286	646	Current colour code
0287	647	Colour under cursor
0288	648	Screen memory page
0289	649	Max size of keybd buffer
028A	650	Repeat all keys
028B	651	Repeat speed counter
028C	652	Repeat delay counter
028D	653	Keyboard Shift/Control flag
028E	654	Last key pattern
028F–0290	655–656	Keyboard table setup pntr
0291	657	Keyboard shift mode
0292	658	0 = scroll enable
0293	659	RS-232 control reg
0294	660	RS-232 command reg

Hex	Dec	Description
0295–0296	661–662	Bit timing
0297	663	RS-232 status
0298	664	# bits to send
0299–029A	665–666	RS-232 speed/code
029B	667	RS232 receive pointer
029C	668	RS232 input pointer
029D	669	RS232 transmit pointer
029E	670	RS232 output pointer
029F–02A0	671–672	IRQ save during tape I/O
02A1	673	CIA 2 (NMI) Interrupt control*
02A2	674	CIA 1 Timer A control log *
02A3	675	CIA 1 Interrupt log *
02A4	676	CIA 1 Timer A enabled flag *
02A5	677	Screen row marker *
02C0–02FE	704–766	(Sprite 11) *
0300–0301	768–769	Error message link
0302–0303	770–771	BASIC warm start link
0304–0305	772–773	Crunch BASIC tokens link
0306–0307	774–775	Print tokens link
0308–0309	776–777	Start new BASIC code link
030A–030B	778–779	Get arithmetic element link
030C	780	SYS A-reg save *
030D	781	SYS X-reg save *
030E	782	SYS Y-reg save *

Hex	Dec	Description		
030F	783	SYS status reg save		*
0310–0312	784–785	USR function jump		64 (B248) *
0314–0315	788–789	Hardware interrupt vector	20:(EABF)	64 (EA31)
0316–0317	790–791	Break interrupt vector	20:(FED2)	64 (FE66)
0318–0319	792–793	NMI interrupt vector	20:(FEAD)	64 (FE47)
031A–031B	794–795	OPEN vector	20:(F40A)	64 (F34A)
031C–031D	796–797	CLOSE vector	20:(F11A)	64 (F291)
031E–031F	798–799	Set-input vector	20:(F2C7)	64 (F20E)
0320–0321	800–801	Set-output vector	20:(F309)	64 (F250)
0322–0323	802–803	Restore I/O vector	20:(F3F3)	64 (F333)
0324–0325	804–805	INPUT vector	20:(F20E)	64 (F157)
0326–0327	806–807	Output vector	20:(F27A)	64 (F1CA)
0328–0329	808–809	Test-STOP vector	20:(F770)	64 (F6ED)
032A–032B	810–811	GET vector	20:(F1F5)	64 (F13E)
032C–032D	812–813	Abort I/O vector	20:(F3EF)	64 (F32F)
032E–032F	814–815	Warm start vector		64 (FE66) *
032E–032F	814–815	USR vector	20:(FED2)	
0330–0331	816–817	LOAD link	20:(F549)	64 (F4A5)
0332–0333	818–819	SAVE link	20:(F685)	64 (F5ED)
033C–03FB	828–1019	Cassette buffer		
0340–037E	832–894	(Sprite 13)		
0380–03BE	896–958	(Sprite 14)		
03C0–03FE	960–1022	(Sprite 15)		

VIC 20

Hex	Dec	Description
0400–0FFF	1024–4095	3K RAM expansion area
1000–1FFF	4096–8191	Normal BASIC memory
1E00–1FF9	7680–8185	Normal Screen memory
1000–11F9	4096–4601	Screen memory w/expansion
1200–	4608–	BASIC memory w/expansion
2000–7FFF	8192–32767	Memory expansion area
8000–8FFF	32768–36863	Character bit maps
9000–900F	36864–36879	Video Interface Chip
9110–912F	37136–37151	VIA Interface – NMI
9120–912F	37152–37167	VIA Interface – IRQ
9400–95FF	37888–38399	Alternate Colour Nybble area
9600–97FF	38400–38911	Main Colour Nybble area
A000–BFFF	40960–49151	Plug-in ROM area
C000–FFFF	49152–65535	ROM: BASIC and Operating System
FF8A–FFF5	65418–65525	Jump Table (Kernal)

Commodore 64

Hex	Dec	Description
0400–07F7	1024–2039	Screen memory (default)
07F8–07FF	2040–2047	Sprite Pointers (default)
0800–9FFF	2048–40959	BASIC RAM memory
8000–9FFF	32768–40959	Alternate: ROM plug-in area
A000–BFFF	40960–49151	ROM: BASIC
A000–BFFF	49060–49151	Alternate: RAM
C000–CFFF	49152–53247	RAM memory, including alternate
D000–D02E	53248–53294	Video Chip (6566)
D400–D41C	54272–54300	Sound Chip (6581 SID)
D800–DBFF	55296–56319	Color nybble memory
DC00–DC0F	56320–56335	Interface chip 1, IRQ (6526 CIA)
DD00–DD0F	56576–56591	Interface chip 2, NMI (6526 CIA)
D000–DFFF	53248–53294	Alternate: Character set
E000–FFFF	57344–65535	ROM: Operating System
E000–FFFF	57344–65535	Alternate: RAM